R13

B.Tech IV Year II Semester (R13) Advanced Supplementary Examinations July 2017
ADVANCED 3G & 4G WIRELESS COMMUNICATION
(Electronics & Communication Engineering)

Time: 3 hours

Max. Marks: 70

PART - A
(Compulsory Question)
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1   Answer the following: (10 X 02 = 20 Marks)
- (a) Distinguish between FDM and OFDM.
- (b) What is OVSF?
- (c) Write 2G standards and the data rates support by them.
- (d) Compare wired and wireless communication systems.
- (e) Define delay spread.
- (f) Define handover and mention its types.
- (g) Mention the advantages of MIMO-OFDM technology.
- (h) Write the differences between GPS and GPRS.
- (i) Explain 4G – LTE.
- (j) Specify the chip rates, modulation schemes used in cdma2000 and WCDMA technologies.

PART - B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT - I

2   Derive an expression to obtain Rayleigh fading density & draw the plot.

OR

3   Explain in detail the BER of wireless communication systems.

UNIT - II

4   Discuss Jakes model for wireless channel correlation.

OR

5   Discuss cellular processes.
- (a) Call setup.
- (b) Handover.

UNIT - III

6 (a) Sketch the block diagram and clearly explain RAKE receiver used in CDMA.
- (b) Write short notes on Walsh codes.

OR

7   State significance of cyclic prefix and write merits and demerits of cyclic prefix.

UNIT - IV

8   Derive an expression for optimal power allocation of MIMO SVD channel to achieve maximum capacity.

OR

9   In detail clearly explain the single band UWB modulation schemes.

UNIT - V

10 (a) List the features of WiMAX.
- (b) Discuss in detail about WiMAX.

OR

11 (a) Sketch and explain the architecture of WCDMA.
- (b) Mention the salient features of WCDMA.

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